Computer Games and Visualization

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The Revolution is Now

- Used to buy vis hardware from SGI, who built it for us
- Now we buy $100 chips from nVidea etc, built for gamers
- Vis5D and VisAD run very fast on Linux box with nVidea GeForce
- Vis5D and VisAD run respectably on laptop with ATI

Vis is out of the Loop

- The game chip makers won't listen to vis folks
- There are thousands of us, millions of gamers
- But it won't matter, because . . .

Abstraction Portability

- Portability of image building abstractions
- Vectors, triangles and textures
- Memory capacity, I/O speed and processor speed
- Vis will be able to use the same resources and abstractions used for games

Programmability

- The game chips will be programmable
- Because they need content
- Sony Play Station 2 programmable in Java
- Full Sail Java game development tools
- Intel graphics cards programmable

Interoperability

- The game chips will be interoperable
- So players can share virtual spaces across the net
- Java for platform-independent game environment

Special Purpose Gives Way to General Purpose

- Supercomputers are giving way to commodity clusters

- IEEE 99 paper by Hanrahan et al about using commodity clusters to replace multi-processor SGIs to drive multi-screen walls

Networked Computer Games will be the Medium of the 21st Century

- As movies and TV were the media of the 20th century
- Compare computer games now to movies in 1900
- Computer games with the visual quality of movies
- Sim-like games where the characters have complex "personalities" and realistic looks and motion

Vis Work will Focus more on People Issues

- Too much focus even now on specialized hardware and interfaces
- The game industry will provide a wide array of cheap, effective tools
- More focus on how user perceives, shares, and interacts with visual representations of information


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